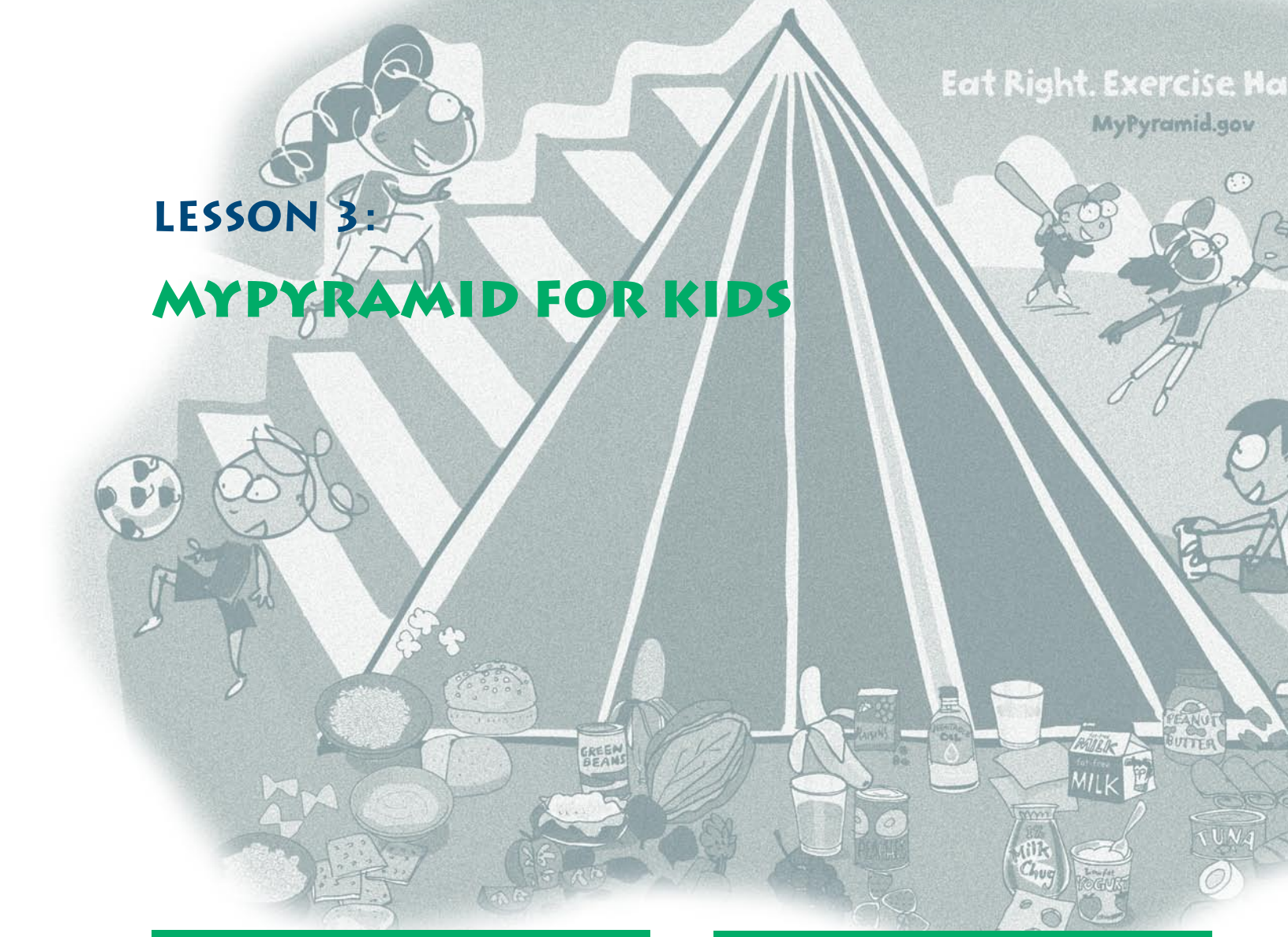



# LESSON 3:

# MYPYRAMID FOR KIDS

## OBJECTIVES

- To identify the food groups that make up MyPyramid for Kids (MPK)
- To learn the major nutrients in each food group
- To understand the important concepts of the MPK: Variety, Proportionality, Moderation, and Activity
- To classify single and combination foods into the appropriate food group(s) on the MPK
- To prepare the garden bed, plant seeds, and transplant seedlings
- To make plant growth charts

## APPLICABLE CONTENT STANDARDS

- English–language arts
- Mathematics
- Science

(See the matrix in Appendix B.)

| Materials for In-class Lesson and Activities | Materials for Gardening Activity |
|---|---|
| Handouts:<br>3-1 MyPyramid for Kids<br>3-2 Match the Food Groups<br>MyPyramid for Kids poster—(Order through the USDA. Schools can receive full-color MyPyramid classroom resources free of charge. To request MyPyramid materials and posters, go to USDA's Team Nutrition Web site http://teamnutrition.usda.gov and click on the "MyPyramid for Kids" link; then click on the "MyPyramid Order Form" link. The MyPyramid Order Form can also be directly accessed through the following link: http://www.ntis.gov/USDA/MyPyramid.aspx.)<br>Food pictures—five pictures per food group (See Appendix D under California Dairy Council for ordering information.)<br>Healthy Choices stickers—If stickers are unavailable, have the children draw pictures on handout 3-2. (See Appendix D under Oregon or Washington State Dairy Council for information on ordering the stickers.)<br>Masking tape<br>Family newsletter | Purchased or finished compost (needed if garden beds were not prepared in lesson 2) (Check with a master gardener in your county or a local nursery to determine the proper type and amount of compost for your garden.)<br>Gardening tools (the number of each will depend on the size of the group):<br>Shovel<br>Digging fork<br>Rake<br>Trowel<br>Seeds (See "Planting Seeds" on page 49.)<br>Starter plants (See "Planting Seeds" on page 49.)<br>Butcher paper<br>Ruler<br>Markers |

| Preparation for In-class Lesson and Activities | Preparation for Gardening Activity |
|---|---|
| Day before the lesson:<br>Photocopy handouts 3-1, 3-2, and the newsletter.<br>Gather the materials.<br>Prepare five stacks of food group pictures (each stack will have one picture from each of the five food groups; seed packets may be substituted for picture cards).<br>Remove the black edges around the food group stickers (otherwise they will be scattered all over the desks). | Ask parents to volunteer for this activity.<br>Week before the lesson:<br>Decide where the garden bed will be located. Make sure the bed receives at least six to eight hours of sunlight.<br>Check the soil moisture. Water thoroughly if the ground is dry.<br>Day before the lesson:<br>Gather the materials.<br>Lightly water the surface of the garden bed one to two days before digging.<br>Check the weather report. |
| Just before the lesson:<br>Tape the large MPK poster onto the wall.<br>Draw a blank MPK on poster paper and tape it onto the wall.<br>Have the students take out the nutrition folders. | |

# NUTRITION LESSON ACTIVITIES
## (60 MIN.)

### 1. Review of lesson 2

- Who remembers what nutrients are?
  *Substances that our bodies need to help us grow and stay healthy*
- Who can name the six different classes of nutrients that we talked about?
  *Carbohydrates, protein, fat, minerals, vitamins, and water*
- Which nutrients provide our bodies with energy?
  *Carbohydrates, protein, and fat*
- Where do we get nutrients?
  *We get them from a variety of foods that come from plants and animals.*

### 2. Introduction to MyPyramid for Kids
(Refer to the MPK poster.)

- We now know that we must eat a variety of different foods to get all the nutrients that our bodies need to grow and stay healthy. How do we know *which* foods and *how much* of them we need to eat?
- Luckily, we have a tool called MyPyramid for Kids to help us figure that out. Has anyone ever seen this image before (point to the MPK)? Where?
- MPK background
  - > The United States Department of Agriculture (USDA) developed MyPyramid for Kids to help you make healthful food choices.
  - > The pyramid classifies foods into food groups according to the nutrients they contain:
    - Grains
    - Vegetables
    - Fruits
    - Milk
    - Meat and Beans
  - > All food groups are important. We need to eat from all of them every day to stay healthy.
  - > The yellow line on the MPK represents oils. We need some oils every day, but oils are not a food group.
- Discuss the important concepts to learn from the MPK: **Variety, Proportionality, Moderation,** and **Activity**.

  **Variety: Eat color every day.** The colors orange, green, red, yellow, blue, and purple represent the five different food groups plus oils. Remember to

eat foods from all the food groups every day. What did you have for breakfast? Where do those foods fit into the MPK? What color (group) were your breakfast foods?

**Proportionality: Eat more from some food groups than from others.** Did you notice that some of the food stripes are wider than others? The different sizes remind you to choose more foods from the food groups with the widest stripes. Which group has the smallest width? Which group has the largest width?

**Moderation: Choose the most healthful foods from each group.** Why are the colored stripes wider at the bottom of the pyramid? Every food group has foods that you should eat more often than others. These foods are at the bottom of the pyramid. Where would a baked potato, french fries, and potato chips fit on the MPK? *(In the vegetable group with the baked potato at the bottom, fries in the middle, and chips at the top.)*

**Activity: Be physically active every day.** The person climbing the stairs reminds you to do something active every day, like running, walking the dog, playing, swimming, biking, or climbing lots of stairs. What activities did you do yesterday?

## 3. Food Group Classification and MPK Location Activity

- Set-up:

  Divide the class into five groups.

  Distribute the blank MyPyramid for Kids handout (3-1) to each student.

  Distribute a stack of food pictures, with one picture per food group, to each group of students.

- Examine each food group one at a time by following the procedures noted below:

  Using the MPK handout (3-1) and the poster, discuss with the class which foods belong in each group and why.

- Classification and location procedures:

  1. Read the name of the food group and the description of the foods in that group. (Start with grains, using the information that follows item 5 in this section.)
  2. Tell the students which major nutrients the grain group provides. (That is, why is the grain group important?) Write key words on the board or an overhead transparency. This step will aid the students in completing the Match the Food Groups handout (3-2). Direct the students to write the key words in the grain group section of handout 3-1.
  3. Ask the student groups to look at their food pictures and, as a group, to identify the food item that belongs in the grain group. (Each student group should have only one food picture from each food group.) After each group has found the food item for the grain group, ask one stu-

dent to hold the card up and tell the class which food item is shown. (Point out those foods that are planted in the garden or could be grown there.)

4. Direct some of the students to tape the food pictures in the correct location on the blank MPK taped on the wall. The other students may brainstorm about other foods in the grain group and draw them on handout 3-1.
5. Repeat the procedure with the other food groups: vegetables, fruits, milk, and meat and beans.

**Grain Group—Make Half Your Grains Whole.**

> This group includes all foods made from any type of grain product (e.g., wheat, rice, oats, rye, cornmeal).

> Examples of foods in this group are bread, cereal, rice, pasta, tortillas, and crackers.

> Grains are a good source of complex carbohydrates. Some complex carbohydrates provide us with energy while others, known as fiber, help to keep the digestive tract running smoothly.

> Whole grains are higher in fiber and some nutrients than are other grains. Popcorn is an example of a whole grain.

> Look for whole wheat or other whole grains on the ingredient labels.

**Vegetable Group—Vary Your Vegetables.**

> All the different parts of the plant, such as the root, stem, leaves, fruit, flowers, and seeds, can be considered vegetables if they are not sweet. (A tomato, for example, is botanically a fruit, but because it is not sweet, we classify it as a vegetable when we are talking in culinary terms.)

> Vegetables have vitamins, minerals, and fiber that our bodies need to keep us healthy, growing, and strong.

> Orange or dark green vegetables are rich in vitamin A.

> Each vegetable has different nutrients that are important for keeping us healthy. To get all of them, we need to eat a variety of vegetables.

> Examples of foods in this group are carrots, spinach, and broccoli. (Which plant parts are they?) What vegetables can you name?

**Fruit Group—Focus on Fruit.**

> Fruits are plant parts that contain seeds and are usually sweet.

> This group provides the vitamins, minerals, and fiber that our bodies need to keep us healthy, growing, and strong.

> Some fruit is rich in vitamin C, such as oranges, kiwi, and mangoes.

> Fruit is a great choice for a healthful snack.

> Examples of foods in this group are apples, bananas, mangoes, orange juice, and raisins. What other fruits can you name?

**Milk Group—Get Your Calcium-Rich Foods.**

> Milk and milk products are sources of calcium, which our bodies need to keep our teeth and bones strong.

> Try to choose milk products that are lower in fat, such as low-fat milk, yogurt, or cheese.

> Examples of foods in this group are milk, chocolate milk, yogurt, ice cream, and cheese.

**Meat and Beans Group—Go Lean with Protein.**

> Both plant and animal products are in the meat and beans group.

> This group provides our body with protein that muscles and bones need to grow and stay healthy.

> Choose lean meat such as turkey or chicken.

> Examples of foods in this group are meat, fish, poultry, eggs, beans, nuts, and seeds.

**Oils**

> Oils are not a food group, but they should be eaten every day in moderation.

> Foods with healthful oils provide nutrients that help to keep the heart healthy.

> Examples of foods with healthful oils are nuts, olives, avocados, and canola oil.

***Note:*** **What is missing?** Fats and sweets such as candy, soda, butter, margarine, dressings, and gravy are not included. These foods should be eaten in moderation to make more room for foods that are high in important nutrients.

**Physical Activity**

The MPK focuses on physical activity. Kids need 60 or more minutes of physical activity per day for a healthy heart and body. Does the class think that most kids get this amount? Why? Why not? How could the students increase their physical activity?

## 4. Closing Comments

- Review all the foods in each food group.
- Discuss combination foods that fit into more than one category. How many food groups would pizza or sandwiches fit into? (Consider the individual ingredients of the food.)

## 5. Review Activity

- Have students complete the Match the Food Groups handout (3-2). The objective is to reinforce what each food group provides for our body and some of the characteristics of the foods in that group. Either provide students with food group stickers for handout 3-2 or have them draw their favorite foods in the boxes to the right of the food group names.

# GARDENING ACTIVITY (30 MIN.)

Before planting the seeds, consider working with the class to decide the layout of the garden.

Divide the class into two groups to make them more manageable. Assign a parent volunteer(s) to assist one group. Have half of the class plant seeds in the garden while the other half works in the classroom on the plant growth charts. While working with the seeds, the students can try to classify them into the appropriate food group on MyPyramid for Kids.

**Planting seeds**

- If the soil was not prepared in lesson 2, do it now. Digging forks or shovels can be used to turn over the soil. This process breaks up the soil and allows more space for root growth.
- Then add the compost to the soil. Mix and level the surface with a rake. Do not pack the soil tightly.
- Plant the seeds according to the directions on the packet.

  Make sure to plant seeds that are likely to grow under the conditions of your area and during the time of year when they are planted. Remember to consider the time until harvest. You may want to purchase some transplants to put directly into your garden. Check with a local master gardener or nursery to learn more details about gardening in your area.
- This may also be a good time to plant some of the seedlings you started in the mini-greenhouses. If the plants are still too small for transplanting, plan to do so a couple of weeks later. Generally, you should allow four to six weeks between planting seeds and transplanting. One good way to check is to gently remove a transplant from the tray. If the roots are in a clump, your plant is ready to go into the garden.
- Consider the type of snacks you may wish to make from the fruits and vegetables in your garden. See lesson 9 or any of the other resources that list snack recipes and ingredients (see Appendix D). You may also want to plant a theme garden (e.g., a salad garden, a pizza garden, or a pyramid garden).

- Make sure plants receive adequate water and sunlight. Too little water or too much sun may cause the seedlings to dehydrate. With too much water or not enough sun, the seedlings may grow slowly or die.
- Have the students walk around the garden plots, not through them, to avoid trampling young plants.

**Plant growth charts**

- A garden must be checked regularly, especially to ensure adequate watering. Make a point to have the class routinely check the garden. This activity can be as simple as walking by the garden on the way back to the class from recess or as intensive as designating a half hour to be spent in the garden every day. Determine what works best with your class.
- Design a chart, or several charts, for the class to keep track of the seedlings or transplants. Have the students create a graph showing the height of different plants at a specified time interval (e.g., each week). Ask the students to make predictions about which plant will grow faster, taller, and so on. You may also make additional charts to track such information as the amount of rainfall each week. Be creative!
- After several weeks have the students make comparisons between the actual plant and their predictions.

## Additional Activities

- Provide a small snack that includes one food from each of the five food groups.
- Have the students, before the lesson, write down their favorite meal. After the students have learned about the MPK, have them compare their meal to the MPK recommendations. Encourage students to substitute other favorite foods so that the meal more closely fits with the goals of variety, proportionality, and moderation.
- Have the students examine the school lunch menu every morning and determine where items would fit into the MPK.
- Cut out pictures of foods from magazines and paste them onto a blank MPK. Display the finished product in the classroom.
- Have the students design a meal of their choice using foods from all the food groups.

## Background Information

(Recommended quantities of foods will be discussed in detail in lesson 4.)

**Grain group.** We need to consume the most amount of food from this group—6 ounces per day. This statement does not mean that the grain group is more important than the other groups; rather, we just need to consume more to ensure an adequate nutrient intake. This group includes foods like bread, pasta, rice, popcorn, and oatmeal. The grain group provides a variety of nutrients, including vitamins and minerals (especially in whole and enriched grain products), some protein, and many carbohydrates. Depending on the method of preparation, the grain group may add a little or a lot of fat to our diets. Grain products are also a good source of fiber. Fiber is a complex carbohydrate that is important in cleaning out the digestive tract.

Two common types of grains are whole and refined. Whole grains generally still contain all their naturally present nutrients; whereas, refined grains generally lose many important nutrients during processing. The nutrients lost include iron, several B vitamins (niacin, riboflavin, thiamin), and fiber. By law refined grains must be enriched with several of the nutrients that were lost, and they must be fortified with the vitamin folic acid. (To *enrich* means to restore something that was lost during the processing of a product. To *fortify* means to add something to a product.) However, these refined products still lack the fiber that was initially present. Therefore, whole grains are a part of a healthful diet.

**Vegetable group.** This group provides a lot of vitamins, minerals, fiber, and other substances important for good health. It is very important to include a variety of vegetables in your diet. The recommended daily amount is 2 1/2 cups, with at least some being a green vegetable and some being an orange vegetable, both of which are high in vitamin A. Some vegetables may be served with a lot of fat (e.g., french fries). Try to eat fresh vegetables without additional fat.

**Fruit group.** This group also provides many nutrients, including vitamins and minerals. Citrus fruits (e.g., oranges, lemons) provide high levels of vitamin C that help us to stay healthy. Children should consume 1 1/2 cups of fruit each day. Most servings should be from whole fruit, not juice. If juice is consumed, it should be 100 percent fruit juice. Be aware that some "fruit" products, especially juices, are not much more than sugar with a fruit flavor; therefore, you need to check the labels (see lesson 5 for more information).

**Meat and beans group.** This group provides protein and other vitamins and minerals. The primary mineral is iron, which helps to transport oxygen in our blood. The recommended amount to consume is 5 ounces per day. Leaner meats, such as turkey, chicken, and fish, should be eaten more often than fattier red meats. Plant products high in protein include beans, peas, nuts, and seeds. Those types of plant foods should be eaten a couple of times per week. Eggs are also in this food group.

**Milk group.** This group provides nutrients in all six classes (carbohydrates, protein, fat, vitamins, minerals, and water). Most important, this group contributes calcium, which is necessary to keep teeth and bones strong and healthy. Pasteurized milk is fortified with vitamin D, which helps the body to absorb the calcium. Growing children need to consume three cups per day because they are undergoing peak bone formation.

**Oils.** Oils are an important source of essential fatty acids and vitamin E in the diet. They differ from other less healthful fats because they are liquid, rather than solid, at room temperature. Good sources of fats include avocados, olives, canola oil, and nuts, but because of their high calorie content, these foods should be eaten in moderation.

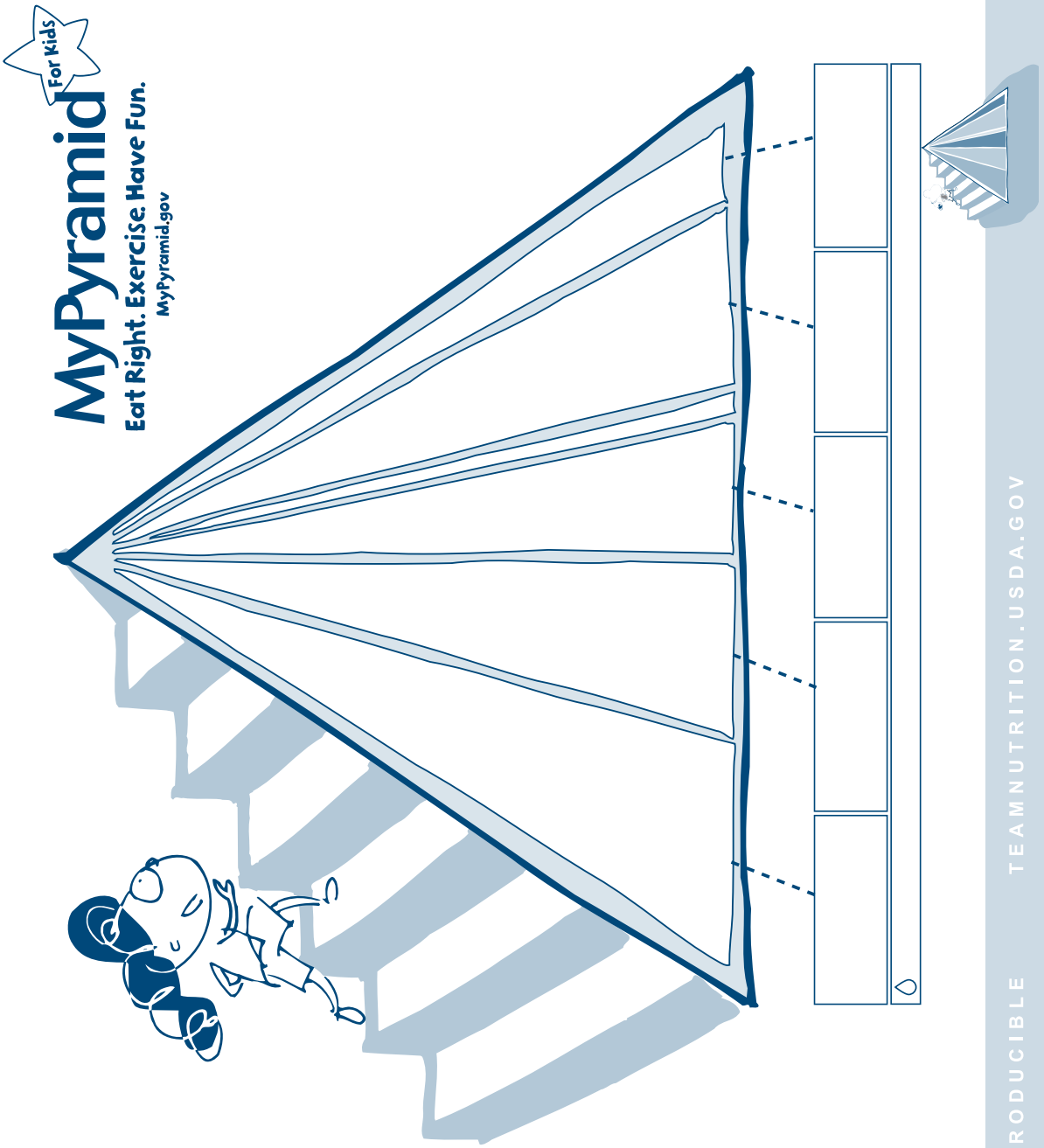
**Vegetarians.** People who have chosen for personal, religious, or health reasons (or all of these) to eliminate some or all animal products from their diets are considered vegetarians. There are several types of vegetarians. A vegan has eliminated all animal products, including milk, eggs, and anything made with animal fat. Ovo-vegetarians will eat eggs. Lacto-vegetarians will eat dairy products. Lacto-ovo vegetarians will eat both eggs and milk products.

*Note:* For more information log onto www.MyPyramid.gov.

Name: _____ Date: _____

Handout 3-1

# MyPyramid for Kids



Name: _____ Date: _____

Handout 3-2

# Match the Food Groups

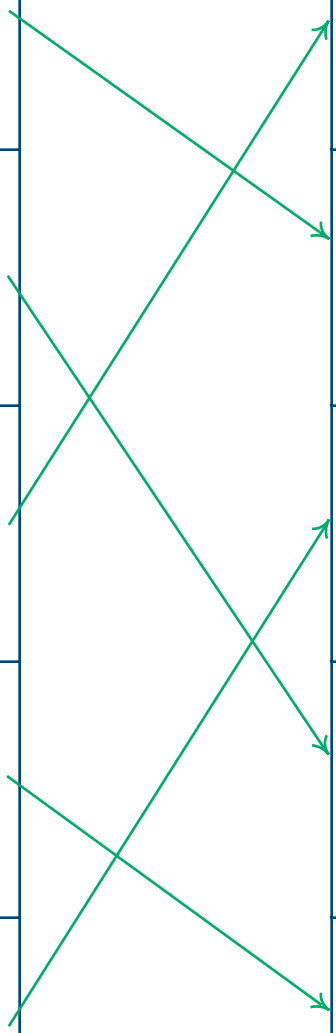
Directions: Draw a line to match each food group with the box that tells us what the group gives our bodies.

| Food Groups | Picture of Foods from Each Food Group | What the Food Group Gives to Our Bodies |
|---|---|---|
| Grains | | Foods from this group can include all the plant parts. They provide many nutrients and fiber. Orange or dark green ones are rich in vitamin A. |
| Fruits | | Foods from this group provide our bodies with fiber and energy from complex carbohydrates. We need carbohydrates to do all the things we do every day. |
| Vegetables | | Foods from this group provide our bodies with the protein that our muscles need to grow and stay strong. |
| Milk | | Foods from this group contain seeds. They provide many nutrients and fiber. Many are rich in vitamin C. |
| Meat and Beans | | Foods from this group provide our bodies with the calcium that our teeth and bones need to grow and stay strong. |

# Match the Food Groups - answer key

Directions: Draw a line to match each food group with the box that tells us what the group gives to our bodies.

| Food Groups | Picture of Foods from Each Food Group | What the Food Group Gives to Our Bodies |
|---|---|---|
| Grains | | Foods from this group can include all the plant parts. They provide many nutrients and fiber. Orange or dark green ones are rich in vitamin A. |
| Fruits | | Foods from this group provide our bodies with fiber and energy from complex carbohydrates. We need carbohydrates to do all the things we do every day. |
| Vegetables | | Foods from this group provide our bodies with the protein that our muscles need to grow and stay strong. |
| Milk | | Foods from this group contain seeds. They provide many nutrients and fiber. Many are rich in vitamin C. |
| Meat and Beans | | Foods from this group provide our bodies with the calcium that our teeth and bones need to grow and stay strong. |



# NUTRITION NEWS:
## Family Letter #3

## A Close Look at MyPyramid For Kids

*MyPyramid for Kids* reminds you to be physically active every day, or most days, and to make healthy food choices. Every part of the new symbol has a message for you. Can you figure it out?

### Be Physically Active Every Day

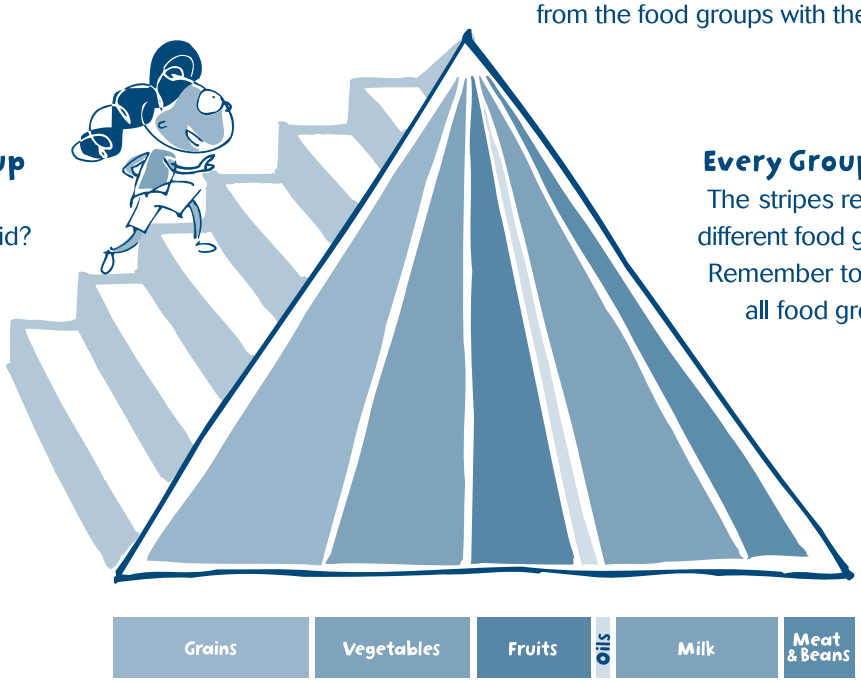
The person climbing the stairs reminds you to do something active every day, like running, walking the dog, playing, swimming, biking, or climbing lots of stairs.

### Eat More From Some Food Groups Than Others

Did you notice that some of the color stripes are wider than others? The different sizes remind you to choose more foods from the food groups with the widest stripes.

### Choose Healthier Foods From Each Group

Why are the stripes wider at the bottom of the pyramid? Every food group has foods that you should eat more often than others; these foods are at the bottom of the pyramid.




### Every Group Every Day

The stripes represent the five different food groups plus oils. Remember to eat foods from all food groups every day.

### Make Choices That Are Right for You

*MyPyramid.gov* is a Web site that will give everyone in the family personal ideas on how to eat better and exercise more.

### Take One Step at a Time

You do not need to change overnight what you eat and how you exercise. Just start with one new, good thing, and add a new one every day.

# Tips *for Families*

## Eat Right

**1 Make half your grains whole.** Choose whole-grain foods, such as whole-wheat bread, oatmeal, brown rice, and low-fat popcorn, more often.

**2 Vary your veggies.** Go dark green and orange with your vegetables—eat spinach, broccoli, carrots, and sweet potatoes.

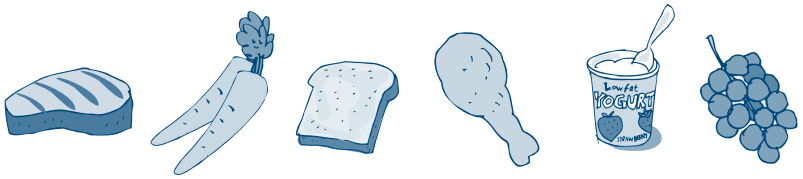
**3 Focus on fruits.** Eat them at meals and at snack time, too. Choose fresh, frozen, canned, or dried, and go easy on the fruit juice.

**4 Get your calcium-rich foods.** To build strong bones, serve low-fat and fat-free milk and other milk products several times a day.

**5 Go lean with protein.** Eat lean or low-fat meat, chicken, turkey, and fish. Also, change your tune with more dry beans and peas. Add chick peas, nuts, or seeds to a salad; pinto beans to a burrito; or kidney beans to soup.

**6 Change your oil.** We all need oil. Get yours from fish, nuts, and liquid oils, such as corn, soybean, canola, and olive oils.

**7 Don't sugarcoat it.** Choose foods and beverages that do not have sugar and caloric sweeteners as one of the first ingredients. Added sugars contribute calories with few, if any, nutrients.




## Exercise

**1 Set a good example.** Be active and get your family to join you. Have fun together. Play with the kids or pets. Go for a walk, tumble in the leaves, or play catch.

**2 Take the President's Challenge as a family.** Track your individual physical activities together and earn awards for active lifestyles at *www.presidentschallenge.org*.

**3 Establish a routine.** Set aside time each day as activity time—walk, jog, skate, cycle, or swim. Adults need at least 30 minutes of physical activity most days of the week; children 60 minutes every day or most days.

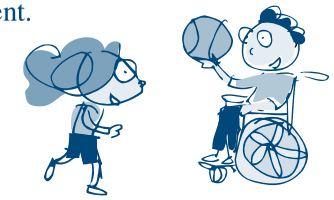
**4 Have an activity party.** Make the next birthday party centered on physical activity. Try backyard Olympics or relay races. Have a bowling or skating party.

**5 Set up a home gym.** Use household items, such as canned foods, as weights. Stairs can substitute for stair machines.

**6 Move it!** Instead of sitting through TV commercials, get up and move. When you talk on the phone, lift weights or walk around. Remember to limit TV watching and computer time.

**7 Give activity gifts.** Give gifts that encourage physical activity—active games or sporting equipment.

HAVE FUN!



# LESSON 4:

# FOOD MATH

## OBJECTIVES

- To review the concepts of and information on MyPyramid for Kids (MPK)
- To identify the recommended daily amounts from each food group
- To measure and identify standard food portion sizes through the use of visual cues
- To create a daily menu based on recommendations from MyPyramid for Kids

## APPLICABLE CONTENT STANDARDS

- English–language arts
- Mathematics
- Science

(See the matrix in Appendix B.)

| Materials for In-class Lesson and Activities | Materials for Gardening Activity |
|---|---|
| Handouts:<br>4-1 Matching Cup and Ounce Equivalents with Visual Cues<br>4-2 Food Math<br>4-3 Activity Cards (one copy per class)<br>MyPyramid for Kids poster<br>Familiar objects (See the table Equivalents for Foods on page 63 for the items needed to complete handout 4-1.)<br>Paper plates, bowls, cups, napkins<br>Food for snacks (a few foods from the table on page 63)<br>Masking tape<br>Family newsletter | Handout 4-4 Common Weeds in California<br>Optional materials: Reference book(s) on weeds in your area (Contact the county cooperative extension for ideas.) |

| Preparation for In-class Lesson and Activities | Preparation for Gardening Activity |
|---|---|
| Day before the lesson:<br>Photocopy handouts 4-1, 4-2, 4-3 (one copy), and the newsletter.<br>Gather the materials. | Day before the lesson:<br>Photocopy handout 4-4.<br>Gather the materials. |
| Just before the lesson:<br>Tape the large MyPyramid for Kids poster onto the board and cover it with a sheet of blank newsprint.<br>Cut out the activity cards.<br>Set up stations for handout 4-1 in a corner of the classroom.<br>Have students take out the nutrition folders. | Just before the lesson:<br>Display the illustrations of common weeds in your area. |

# NUTRITION LESSON ACTIVITIES
## (60 MIN.)

### 1. Review of Lesson 3

Draw a triangle on the newsprint covering the MyPyramid for Kids (MPK) poster.

- Why is the MPK important?

  It is a guideline that shows us that different foods fit into different groups. We need to eat foods from each of these food groups every day because **together** they provide the different nutrients that our bodies need to grow and stay healthy.

- What food groups are listed on the MPK?

  Have the students give the name of each food group on the MPK and identify some of the foods that belong in each group.

  For example, *grain group: cereal, bread, rice, tortilla*

  Remember that the width of a food group on the MPK does not mean it is more or less important than another. Instead, it means we need to eat more from that group to get the right amount of nutrients.

Remove the blank sheet to display the MyPyramid for Kids poster in color. Keep the newsprint MPK on the board so that you can write on it later.

### 2. Review of healthy food choices within each food group
(Refer to the MPK poster during the discussion.)

- Make half your grains whole. Look for ingredients such as brown rice, whole oats, and whole wheat in your grain foods.
- Vary your vegetables. Choose to eat a variety of vegetables each day, including dark green and orange vegetables.
- Focus on fruit. Include fruit for dessert or as a snack.
- Get your calcium-rich foods. These choices should be low fat.
- Go lean with protein. Choose foods lower in fat, such as turkey, chicken, or beans.
- Get enough physical activity. Try to get 60 or more minutes of physical activity each day.

## 3. How much food do we need?

- Now that we know how to make healthier choices, let's take a closer look at how much we need from each food group.
- Write the recommended daily amounts on the newsprint MPK:
  - Grains—6 ounces
  - Vegetables—2 1/2 cups
  - Fruits—1 1/2 cups
  - Milk—3 cups
  - Meat and Beans—5 ounces
- The MPK gives the amounts to eat in ounces and cups. Ounces are given for the grain and meat and beans groups. The amounts for vegetables, fruit, and milk are given in cups.
- There are several different ways to measure ounce and cup equivalents of foods. We can use measuring cups (wet and dry), measuring spoons, or a scale; or we can count whole pieces (for example, one slice of bread).
- *Equivalent* means something that has the same amount or value. For example, the recommendation is 6 ounces of grains every day. One slice of bread is about 1 ounce as is 1/2 cup of cooked rice. Those measures are equivalent, or have equal value, because the nutrients are present in similar amounts.
- *Note:* Ounce equivalents for grains can also be measured in cups, e.g., 1 cup ready-to-eat cereal or 1/2 cup cooked cereal. Ounce equivalents for meats and beans can also be measured in tablespoons, e.g., 1 tablespoon peanut butter.
- Unless you do a lot of cooking, these sizes can be difficult to picture. To help you, we are going to take a look at some ounce and cup equivalents and compare them to familiar objects.
- Provide the students the opportunity to compare ounce and cup equivalents of some food items to familiar objects (see the chart "Equivalents for Foods").
  - Distribute handout 4-1. Ask the students to fill in the food group column on the left while you set up the stations.
  - Place the food items listed in the chart in stations set up around the classroom. Each station will have an activity card, a food item, a measuring device (if applicable), and a familiar object (if applicable) that is equivalent to an ounce or a cup. For those stations that need a dry measuring cup, set out cups of several different sizes so that students can see the differences.
  - Demonstrate one example to the class.

- Instruct the students to go around the room and look at the different ounce or cup equivalents and compare them to the more familiar objects. (Each station displays a one ounce or one cup equivalent.) Tell the students to match the ounce or cup equivalent with the familiar objects noted on handout 4-1.
- **Although children will be handling food, remind them that this is not an eating activity.** Provide a snack at the end of the activity as an incentive.
- Students do not need to write answers to the questions on the activity cards. The questions are used to provoke discussion.
- Mention which, if any, of the foods were selected from the garden. Ask the students, Do you know how many ounce or cup equivalents you will get from one seed? From your whole garden? Have the students predict the amounts and record those figures.
- Remember that two cups of raw leafy greens will look about the same as two cups of cereal because two cups will always look about the same size as a softball. That is why it is helpful to know some visual cues.

**Equivalents for Foods**

| Food Stations | One Ounce or Cup Equivalents | Place in or on a . . . | Visual Cues Equal to One Ounce or Cup Equivalent |
|---|---|---|---|
| Apple | 1 small | Plate | Child's fist |
| Cooked rice* | 1/2 cup | Bowl | Paper cupcake holder |
| Raisins | 1/2 cup | Plate | 2 small raisin boxes |
| Chopped lettuce | 2 cups | Bowl | Softball |
| Milk | 1 cup | 10-oz. glass | School lunch milk carton (8 oz.) |
| Cheese | 1 1/2 oz. | Plate | 3 dominoes |
| Peanut butter | 1 tablespoon | Plate | Your thumb |
| Sandwich meat slices | 1 ounce | Plate | 1 CD |

* After cooking the rice, mix in a small amount of oil to keep it from sticking.

## 4. Review activities

- Distribute snacks to each group (optional).
- Review the cup and ounce equivalent activity.
- Direct students to complete the Food Math handout (4-2) and to circle those foods that can be grown in their garden. Review the students' work in class.

## Additional Activities

1. Provide a small snack with the lesson on ounce and cup equivalents so that students will not eat the foods used as a part of the hands-on activity. Include foods from two or more of the food groups.
2. Take a closer look at the foods in a typical school lunch. (The food service staff may be able to provide you with a sample meal.) Measure the amounts of each item. How many ounce equivalents is each item? Identify the food group into which each lunch item falls.
3. Have the students record the types and amounts of fruits and vegetables they eat for one to three days. Are they eating the recommended amounts? Are they eating a variety of healthful choices? One way to tell is whether they are eating a "rainbow of colors."
4. Have the students record all the food they eat for one day and then compare their intake with the MPK recommendations. For additional math activities, graph the results for the whole class, determine the class average, or calculate the percentage of students who ate the recommended amount from each food group.

## Gardening Activity
(30 MIN.)

- Consult a local master gardener or a good reference book for pictures of weeds common to your area (e.g., *Weeds of the West).** Internet search engines may also provide good sources of information on weeds that grow in your area.

  Some common weeds are oxalis, mallow (cheeseweed), dandelion, scarlet pimpernel, and many different annual grasses.

- What is a weed?

  A weed is a plant that is growing where we don't want it and often at a faster rate than the seeds we intentionally planted in the garden. Crops and weeds compete for nutrients, water, and sunlight. Since weeds grow so quickly, they absorb the nutrients from the soil that are intended for our crops.

  Before we go into the garden and start pulling "weeds," we need to make sure that we are removing weeds, not the vegetables we planted. To do this, we must first be able to identify the weeds.

- Distribute the Common Weeds in California handout (4-4).
- Have the students go out to the garden in small groups to identify and pull different weeds.
- If time allows, have the students draw pictures of the weeds they were unable to identify in the garden. Use the references to identify the weeds.

(The idea for this activity was provided by Mary Shaw and Meg Grumio, Solano County Master Gardeners, University of California Cooperative Extension.)

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*Whitson, Tom D., *Weeds of the West*. (Ninth edition). Laramie, Wyo.: Western Society of Weed Science in cooperation with the Western United States Land Grant Universities Cooperative Extension Services, 2002.

Name: _____ Date: _____

Handout 4-1

# Matching Cup and Ounce Equivalents with Visual Cues

Directions:

1. To the left of each food, write the name of the food group in which it belongs.
2. Then draw a line from the cup or ounce equivalent of each food to the appropriate familiar object (visual cue).

   (*Hint:* You may see the familiar objects at the stations in the classroom.)

| Food Groups | Foods | One Ounce or Cup Equivalents | One Ounce or Cup Equivalent Looks About the Same Size as . . . | |
|---|---|---|---|---|
| | Apple | 1 whole small | | Your thumb |
| | Cooked rice | 1/2 cup | | 1 CD |
| | Raisins | 1/2 cup | | Child's fist |
| | Peanut butter | 1 tablespoon | | Softball |
| | Milk | 1 cup | | 3 dominoes |
| | Chopped lettuce | 2 cups | | Cupcake wrapper |
| | Cheese | 1 1/2 ounces | | 2 small boxes |
| | Sandwich meat | 1 ounce | | School lunch milk carton |

Handout 4-1

# Matching Cup and Ounce Equivalents with Visual Cues—Answer Key

Directions:

1. To the left of each food, write the name of the food group in which it belongs.
2. Then draw a line from the cup or ounce equivalent of each food to the appropriate familiar object (visual cue).

   (*Hint:* You may see the familiar objects at the stations in the classroom.)

| Food Groups | Foods | One Ounce or Cup Equivalents | One Ounce or Cup Equivalent Looks About the Same Size as . . . |
|---|---|---|---|
| ***Fruit*** | Apple | 1 whole small | Your thumb |
| ***Grain*** | Cooked rice | 1/2 cup | 1 CD |
| ***Fruit*** | Raisins | 1/2 cup | Child's fist |
| ***Meat and Beans*** | Peanut butter | 1 tablespoon | Softball |
| ***Milk*** | Milk | 1 cup | 3 dominoes |
| ***Vegetable*** | Chopped lettuce | 2 cups | Cupcake wrapper |
| ***Milk*** | Cheese | 1 1/2 ounces | 2 small boxes |
| ***Meat and Beans*** | Sandwich meat | 1 ounce | School lunch milk carton |

Name: _____ Date: _____

Handout 4-2

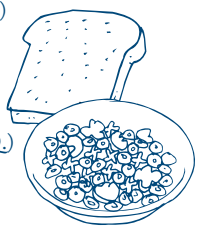
# FOOD MATH

**Jason is 9 years old. He's physically active sometimes. Each day, he needs to eat:**

| Grains | Vegetables | Fruit | Milk | Meat and Beans |
|---|---|---|---|---|
| 6 ounces | 2½ cups | 1½ cups | 3 cups | 5 ounces |

Help Jason decide what to eat today. Plan breakfast, lunch, dinner, and a snack. Be sure he gets all the food he needs from each group. (Food items may be selected more than once.)

## Grains 6 ounces



___ 1 slice whole-wheat toast* (1 OZ EQ.)
___ 5 whole-wheat crackers* (1 OZ EQ.)
___ 1 slice white bread (1 OZ EQ.)
___ 1 slice whole-wheat bread* (1 OZ EQ.)
___ 1 cup whole-grain ready-to-eat breakfast cereal* (1 OZ EQ.)
___ ½ cup cooked brown rice* (1 OZ EQ.)
___ 1 cup cooked pasta (2 OZ EQ.)
___ 1 hamburger bun (2 OZ EQ.)
___ 3 cups low-fat popcorn* (1 OZ EQ.)

*Items marked with a * are whole-grain.*

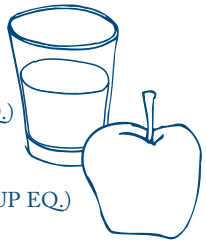
## Vegetables 2½ cups

___ 6 baby carrots* (½ CUP EQ.)
___ 1 large ear of corn (1 CUP EQ.)
___ 1 medium baked potato (1 CUP EQ.)
___ 1 cup cooked greens* (1 CUP EQ.)
___ 1 large baked sweet potato* (1 CUP EQ.)
___ 3 spears broccoli* (1 CUP EQ.)
___ ½ cup tomato juice (½ CUP EQ.)
___ 1 cup chopped lettuce (½ CUP EQ.)

*Items marked with a * are dark green or orange vegetables.*

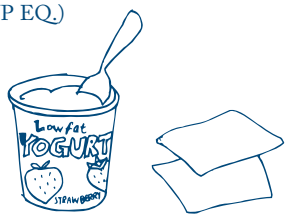
*Key: (1 OZ EQ.) means (equals 1-ounce equivalent).*

## Fruits 1½ cups



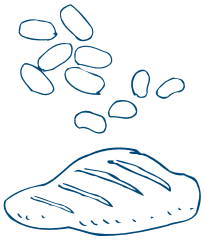
___ 1 small apple or ½ large apple (1 CUP EQ.)
___ 1 large orange (1 CUP EQ.)
___ 1 snack-sized container of peaches (½ CUP EQ.)
___ 1 large plum (½ CUP EQ.)
___ 1 small box raisins (½ CUP EQ.)
___ 1 cup 100% orange juice (1 CUP EQ.)
___ 1 medium wedge cantaloupe (½ CUP EQ.)
___ 1 small wedge watermelon (1 CUP EQ.)

## Milk 3 cups

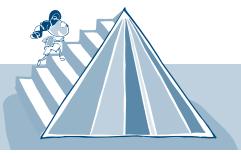



___ ½ cup low-fat or fat-free cottage cheese (¼ CUP EQ.)
___ 1 cup fat-free milk (1 CUP EQ.)
___ 1 snack-sized low-fat or fat-free yogurt (½ CUP EQ.)
___ 1 half-pint container 1% or 2% milk (1 CUP EQ.)
___ 2 ounces of low-fat or fat-free American cheese (1 CUP EQ.)
___ 1½ ounces of low-fat or fat-free cheddar cheese (1 CUP EQ.)
___ 1½ cups light ice cream (1 CUP EQ.)

## Meat and Beans 5 ounces



___ 1 ounce of nuts (2 OZ EQ.)
___ 1 cup split pea soup (2 OZ EQ.)
___ 1 small chicken breast half (3 OZ EQ.)
___ 1 small lean hamburger (3 OZ EQ.)
___ 1 hard-boiled egg (1 OZ EQ.)
___ 1 tablespoon peanut butter (1 OZ EQ.)
___ ¼ cup of pinto beans (1 OZ EQ.)
___ 1 slice of turkey (1 OZ EQ.)



Handout 4-3

# ACTIVITY CARDS

Directions for teachers: Photocopy these activity cards onto card stock paper and cut out each one. Laminate the cards (if desired) and place them at each station.

## APPLE

1 cup equivalent = 1 whole small

### Activity:

1. Pick up the apple.
2. How does one serving compare to the size of your fist? Is it the same size?

## COOKED RICE

1 ounce equivalent = 1/2 cup

### Activity:

1. Put the rice into the correct measuring cup.
2. Put the rice back into the bowl.
3. A half cup of rice would be about the same size as what familiar object?

Handout 4-3

# ACTIVITY CARDS

## RAISINS

1 cup equivalent = 1/2 cup

**Activity: DO NOT EAT!**

1. Put the raisins into your hand.
2. What does one serving of raisins feel like in your cupped hand?
3. Put the raisins back into the bowl.

## PEANUT BUTTER

1 ounce equivalent = 1 tablespoon

**Activity: DO NOT TOUCH!**

1. Look at one serving of peanut butter.
2. One tablespoon is about the same size as what familiar object?
3. How many servings of peanut butter do you put on your peanut butter and jelly sandwich?

Handout 4-3

# ACTIVITY CARDS

## MILK

1 cup equivalent = 1 cup

**Activity:**

1. Carefully pour the milk into the measuring cup.
2. How much milk was in the glass?
3. Carefully pour the milk back into the glass.
4. How many servings of milk do you drink with your lunch?

## RAW LEAFY GREENS

1 cup equivalent = 2 cups

**Activity:** **DO NOT EAT!**

1. Put the greens into the correct measuring cup.
2. How many servings of salad do you think you eat with dinner?
3. Put the leafy greens back into the bowl.
4. Two cups look about the same size as what familiar object?

Handout 4-3

# ACTIVITY CARDS

## CHEESE

1 cup equivalent = 1½ ounces

**Activity:** **DO NOT EAT!**

1. Carefully place the cheese on the scale.
2. How much does one serving of cheese weigh?
3. Put the cheese back on the plate.
4. One and one-half ounces look about the same size as what familiar object?

## SANDWICH MEAT

1 ounce equivalent = 1 ounce

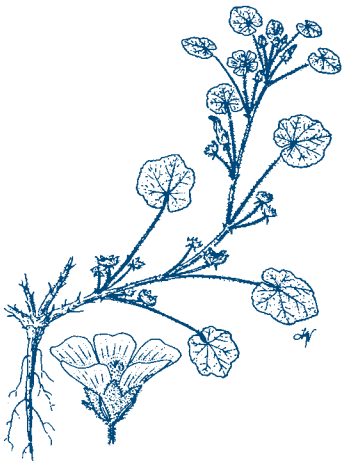
**Activity:** **DO NOT EAT!**

1. Carefully place the meat on the scale.
2. How many servings of meat do you think you put on your sandwich?
3. Put the meat back onto the plate.
4. One ounce of meat looks about the same size as what familiar object?

Handout 4-4

# COMMON WEEDS IN CALIFORNIA

Oxalis



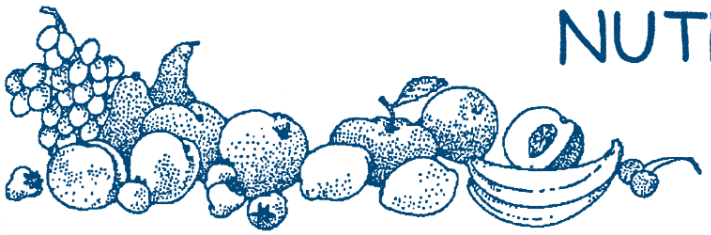
Mallow (Cheeseweed)

Dandelion

Scarlet Pimpernel

Wild Oats

Soft Chess



# NUTRITION NEWS:

## Family Letter #4

### Food Math

MyPyramid.gov
STEPS TO A HEALTHIER YOU

MyPyramid reminds us to make healthy food choices and to be active every day.

Some stripes are wider than others. This tells us that we need more food from these groups every day. But how much is enough? Read on or go to MyPyramid.gov.

MyPyramid gives the amounts to eat in ounces and cups—ounces for the grain and meat and beans groups and cups for the vegetables, fruit, and milk groups. Below are the amounts most kids need to eat each day. The actual amount your child will need depends on his or her body and level of activity. Go to MyPyramid.gov to find the recommendation that is right for your child.

| Grains | Vegetables | Fruits | Milk | Meat and Beans |
|---|---|---|---|---|
| 6 ounces | 2 1/2 cups | 1 1/2 cups | 3 cups | 5 ounces |

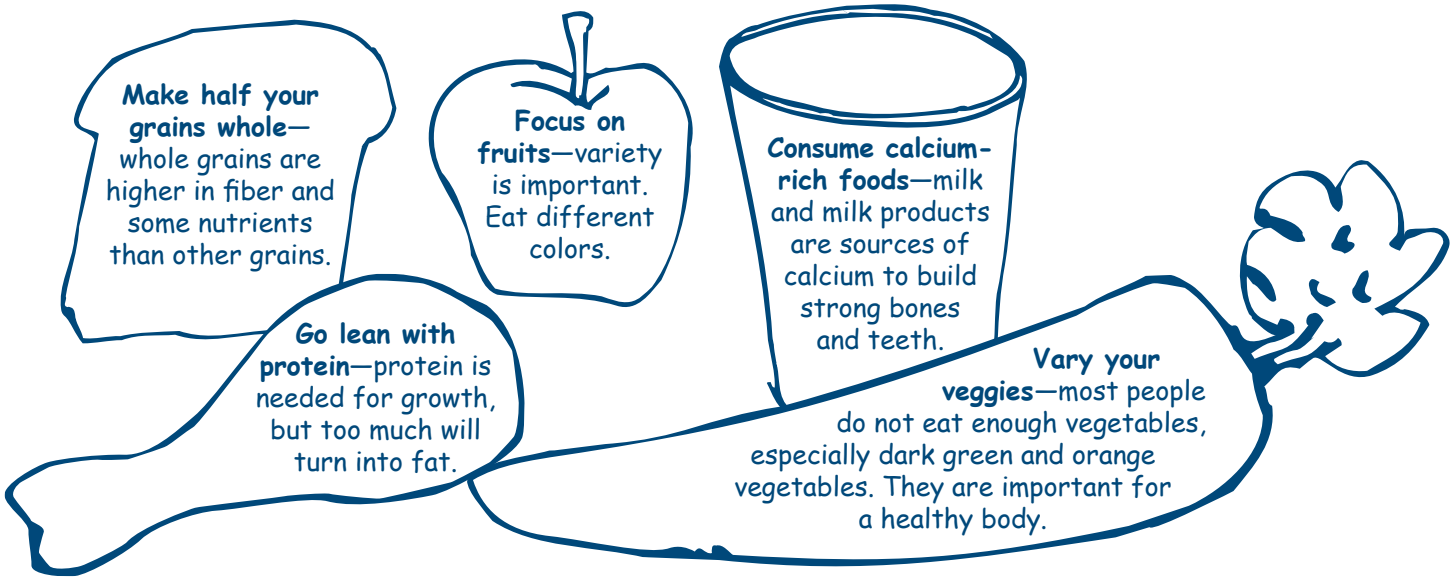
Here are some sample food amounts that are equivalent to an ounce(s) or one cup:

| 1 ounce | 1 cup | 1 cup | 1 cup | 2 ounces |
|---|---|---|---|---|
| 1 slice bread | 12 baby carrots | 1 small apple | 1 cup milk | 1 ounce nuts |
| 1 cup cold cereal | 1 cup cooked greens | 1 large orange | 2 ounces low-fat cheese | 2 tablespoons peanut butter |
| 1/2 cup cooked rice | 2 cups lettuce | 2 small boxes raisins | 1 1/2 cups light ice cream | 1/2 cup cooked pinto beans |
| 1 small corn tortilla | 1 medium baked potato | 1 cup 100% orange juice | | 1 small chicken drumstick |

**Remember to find balance between food and physical activity.** Kids should be physically active every day.
**Limit fats, sugars, and sodium.**

# Family Activity

**How can I tell if I am making healthful choices? Here are some great hints that will be easy for you and your family to remember.**




## Fruits and Vegetables—More Matters!

For the next three days, keep track of how many cups of fruits and vegetables your family eats.

Directions:

1. List your family members' names, including yourself, on the left. (Use a separate sheet of paper if necessary.)
2. Starting today, draw a ☺ under "Day 1" each time you eat a cup of fruit or vegetables.
3. Tomorrow, draw ☺s under "Day 2," and the next day draw ☺s under "Day 3."
4. Who in your family eats the most fruits and vegetables? Discuss how you can eat more fruits and vegetables every day.
5. Bring this activity sheet back to class as soon as you have completed it.

### Family Activity—Fruits and Vegetables

| Family Member's Name | Day 1 | Day 2 | Day 3 |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

# Notes